

IN THE ABSTRACT:

Delete the abstract presently of record and insert therefor the new abstract submitted herewith on a separate sheet.

IN THE DRAWINGS:

Submitted herewith is a copy of Fig. 6B on which has been marked in red a proposed drawing revision. Upon approval of the drawing revision and allowance of the application, the formal drawings will be accordingly revised.

ADDITIONAL FEE:

Enclosed herewith is a check in the amount \$234.00 to cover the cost of thirteen (13) additional claims in excess of 20 total. Should the check prove insufficient or should other fees be required, authorization is hereby given to charge any such insufficiency or fee to our Deposit Account No. 01-0268.

REMARKS

In the last Office Action, the Examiner withdrew claims 4-12 from further consideration as being directed to a non-elected invention. The specification and claims were objected to as containing informalities. Claims 2 and 3 were

rejected under 35 U.S.C. §112, second paragraph, for indefiniteness. Claim 2 was rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,522,529 to Yurman et al. ("Yurman"). Claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 1,002,922 to Lederer. Additional art was cited of interest.

In accordance with the present response, the specification has been suitably revised to correct informalities, including those noted by the Examiner, and to place it in better conformance with U.S. practice. Original claims 1-3 have been replaced by new claims 13-45 to further patentably distinguish from the prior art of record, overcome the indefiniteness rejection, improve the wording, and provide a fuller scope of coverage. Non-elected claims 4-12 have been canceled without prejudice or admission and subject to applicants' right to file a continuing application to pursue the subject matter of the non-elected claims. The title has been changed to "HINGE ASSEMBLY AND WRIST MOUNTING-TYPE ELECTRONIC APPARATUS UTILIZING HINGE ASSEMBLY" to more clearly reflect the invention to which the new claims are directed. A proposed drawing revision has been submitted in Fig. 6B. A new, more descriptive abstract has been substituted for the original abstract.

Attached hereto is a marked-up version of the changes made to the title, abstract and specification by the current amendment. The attached pages are captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Applicants respectfully request reconsideration of their application in light of the following discussion.

The present invention is directed to a hinge assembly for connecting strap members to the main body of a wrist mounting-type electronic apparatus.

With reference to the embodiment shown in Figs. 6A-6B and 7A-7B, the hinge assembly has a first hinge member 38 integrally connected to the main body 31 of an electronic apparatus 30. A second hinge member 34 is integrally connected to the strap member 32 and connected to the first hinge member 38 for relative pivotal movement therewith to pivot the strap member 32 between a locked state and an unlocked state relative to the main body 31. A biasing member 45 connects the second hinge member 34 to the first hinge member 38 and biases the second hinge member 34 in a direction of rotation toward the unlocked state of the strap member 32. A latch pin 42 is mounted on the second hinge member 34. A cavity 41 is formed in the first hinge member 38 for

selectively receiving therein the latch pin 42 to place the strap member 32 in the locked state relative to the main body 31.

By the foregoing construction of the hinge assembly according to the present invention, movement of the strap member between a locked state and an unlocked state is facilitated as compared to the conventional art described on pages 1-2 of the specification.

The prior art of record does not disclose or suggest the subject matter recited in new claims 13-45.

New independent claim 13 is directed to a hinge assembly and requires a first hinge member, a second hinge member mounted to undergo rotational movement between a locked state and an unlocked state relative to the first hinge member, a biasing member connecting the second hinge member to the first hinge member and biasing the second hinge member in a direction of rotation toward the unlocked state of the second hinge member relative to the first hinge member, a latch pin mounted on one of the first hinge member and the second hinge member, and a cavity formed in the other of the first hinge member and the second hinge member for receiving therein the latch pin to place the second hinge member in the locked state relative to the first hinge member. No corresponding structural combination is disclosed or suggested by the prior art of record.

For example, Yurman discloses a clasp assembly 25 for a watch bracelet. As shown in Figs. 4-6, the clasp assembly 25 has a male coupling 27 defined by a housing and a depending insert and a female coupling 33 having an inside wall which defines an opening that is sized to selectively receive the insert of the male coupling. A pair of tab members 41 overlying the insert of the male coupling 27 for selectively engaging the female coupling 33 along the inside wall thereof. A spring member 55 is operatively connected between the two tab members 41 to enable the user to selectively lock and unlock the insert from the female coupling.

Yurman clearly does not disclose or suggest a first hinge member and a second hinge member mounted to undergo rotational movement between a locked state and an unlocked state relative to the first hinge member, as required by independent claim 13. In Yurman, the male and female couplings 27, 33 are not hinge members mounted to undergo rotational movement relative to one another. Yurman also does not disclose or suggest a biasing member connecting the second hinge member to the first hinge member and biasing the second hinge member in a direction of rotation toward the unlocked state of the second hinge member relative to the first hinge member, as required by independent claim 13. In Yurman, the

spring member 55 urges the spacers 45 of tab members 41 in an outward direction (i.e., the spring 55 does not urge any component in a direction of rotation).

Lederer discloses a bracelet having tubular wings 1, 2 provided with hinge blocks 3, 4, respectively (Figs. 1-8). However, Lederer does not disclose or suggest the structural combination and corresponding functions of the components of the hinge assembly recited in independent claim 13. For example, Lederer does not disclose or suggest a biasing member connecting the second hinge member to the first hinge member and biasing the second hinge member in a direction of rotation toward the unlocked state of the second hinge member relative to the first hinge member, as required by independent claim 13.

New independent claim 20 is also directed to a hinge assembly and requires a first hinge member securable in use to a body member, the first hinge member having a peripheral surface, a slot formed in the peripheral surface, and a cavity formed in the peripheral surface and disposed in communication with the slot, a second hinge member securable in use to a rotational member for rotation therewith between a locked state and an unlocked state of the rotational member relative to the body member, the second hinge member having a peripheral surface and a bore having an open end and formed in

the peripheral surface, a first biasing member connecting the second hinge member to the first hinge member and biasing the second hinge member and the rotational member in a direction of rotation towards the unlocked state of the rotational member, a latch pin movably mounted in the bore of the second hinge member, a second biasing member disposed in the bore of the second hinge member for biasing an end portion of the latch out of the open end of the bore and into the cavity of the first hinge member to place the rotational member in the locked state, and a push mechanism disposed in the slot of the first hinge member for undergoing movement therein and into the cavity of the first hinge member to push the latch pin out of the cavity of the first hinge member when the rotational member is in the locked state so that the rotational member is biased by the first biasing member towards the unlocked state.

The prior art of record does not disclose or suggest the structural combination of the hinge assembly recited in independent claim 20. For example, Lederer and Yurman do not disclose or suggest the specific structure and corresponding functions of the hinge members, biasing members, latch pin and push mechanism recited in independent claim 20.

New independent claims 24 and 35 are directed to hinge assemblies described above according to the present invention in combination with a portable electronic apparatus

having a main body and one or more strap members for mounting the main body to an arm of a user. No corresponding structural combinations are disclosed or suggested by the prior art of record.

New dependent claims 14-19, 21-23, 25-34 and 36-45 depend on and contain all of the limitations of independent claims 13, 20, 24 and 35, respectively, and, therefore, distinguish from the references at least in the same manner as claims 13, 20, 24 and 35.

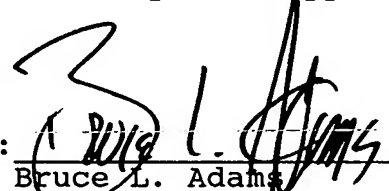
Moreover, there are separate grounds for patentability of the new dependent claims which are directed to the specific structure of the cavity and the latch pin (claims 14, 17, 25, 28, 36, 39), the first hinge member (claims 15, 18, 23, 26, 29, 31, 37, 40, 42), the second hinge member (claims 23, 31, 42), the push mechanism (claims 15, 16, 18, 19, 21, 26, 27, 29, 30, 37, 38, 40, 41), the biasing member (claim 17), the rotational member (claim 22), the spring member (claim 28), the portable electronic apparatus (claims 32, 33, 43, 44) and the microphone and speaker (claims 34, 45). No corresponding structural features are disclosed or suggested by the prior art of record.

In view of the foregoing amendments and discussion,
the application is believed to be in allowable form.
Accordingly, favorable reconsideration and allowance of the
claims are most respectfully requested.

Respectfully submitted,

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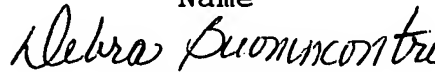
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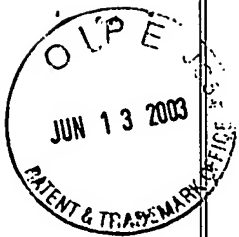
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June 10, 2003

Date



VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE TITLE:

The title of the invention has been amended as follows:

HINGE ASSEMBLY AND WRIST [MOUNTING TYPE] MOUNTING-TYPE ELECTRONIC APPARATUS UTILIZING HINGE ASSEMBLY".

IN THE ABSTRACT:

The original abstract has been substituted with the following new abstract:

A hinge assembly has a first hinge member and a second hinge member mounted to undergo rotational movement between a locked state and an unlocked state relative to the first hinge member. A biasing member connects the second hinge member to the first hinge member and biases the second hinge member in a direction of rotation toward the unlocked state of the second hinge member relative to the first hinge member. A latch pin is mounted on one of the first hinge member and the second hinge member. A cavity is formed in the other of the first hinge member and the second hinge member for selectively receiving the latch pin to place the second hinge member in the locked state relative to the first hinge member.

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IN THE SPECIFICATION:

Paragraph beginning at line 3 of page 1 has been amended as follows:

The present invention relates to a hinge assembly and to wrist mounting-type electronic apparatus mounted on the wrist and utilizing the hinge assembly.

Paragraph beginning at line 9 of page 3 has been amended as follows:

Hence, the invention has been carried out in view of the above described and it is an object thereof to provide a hinge assembly and a wrist mounting-type electronic apparatus utilizing the hinge assembly and which can attach and detach a mounting member by a simple operation and is not fluctuated even in an opened state thereof.

Paragraph beginning at line 14 of page 3 has been amended as follows:

In order to achieve the above-described object, according to the invention, there is provided a wrist mounting type electronic apparatus comprising a strap formed [by] of a hard material, a hinge attached to a coupling portion of the strap and a cabinet of a main body and urged by a spring in a

direction of opening the strap relative to the cabinet of the main body, a push button provided at the cabinet and engaging means engaged in a state of mounting the strap onto a wrist and disengaged by the push button.

Heading at line 7 of page 15 has been amended as follows:

BRIEF DESCRIPTION OF THE [SEVERAL VIEW OF THE]
DRAWINGS

Paragraph beginning at line 25 of page 21 has been amended as follows:

In this way, according to the wrist mounting-type electronic apparatus of Embodiment 1, engagement of the inserting portion and the inserted portion is disengaged by the push button and the strap is brought into the opened state and therefore, the wrist mounting-type electronic apparatus can promptly be dismounted from the wrist. There also is the case in which the wrist mounting-type electronic apparatus is intended to attach and detach promptly from and to the wrist depending on its function such as a communication function and accordingly, in that case, the invention is significantly convenient. Further, according to the invention, the straps are formed [by] of [the] a hard material and therefore, the wrist mounting-type electronic apparatus is mounted onto the

wrist extremely easily. Further, according to the invention, the straps are engaged by combining the inserting portion and the inserted portion and accordingly, the engagement can optically be recognized easily and handling there of is also facilitated.

Paragraph beginning at line 17 of page 22 has been amended as follows:

Further, according to the invention, in the case in which the straps comprise two pieces, when the engagement is disengaged, the straps [C and D] can be brought into an opened state on both sides of the main body and therefore, the straps [C and D] can be built with a microphone and a speaker. Thereby, from a similarity between a length around the wrist and a length between the ear and the mouth, the wrist mounting-type electronic apparatus is easy to use in both modes of mounting the wrist mounting type electronic apparatus on the wrist and inputting the wrist mounting-type electronic apparatus to the ear and the mouth.

Paragraph beginning at line 3 of page 23 has been amended as follows:

Figs. [6] 6A-6B illustrate side sectional views showing a wrist mounting type electronic apparatus and hinges

according to Embodiment 2 of the invention. Fig. 6A is a side sectional view showing a total of the electronic apparatus and Fig. 6B is a front view showing a hinge portion. A wrist mounting type electronic apparatus 30 shown in Fig. 6A is constituted by a main body 31 and two pieces of straps 32 and 33. In the drawing, the strap 32 on the left side of the paper face shows a closed state and the strap 33 on the right side shows an opened stated. The main body 31 and the strap 32 and 33 are coupled by two [hinges] hinge units, each having hinge members 34, 38 and 35, 39, respectively (hereinafter referred to as "hinge pieces"). [Holes] Bores 36 and 37 (hereinafter referred to as "holes") are perforated in diameter directions at surfaces of hinge pieces 34 and 35 on sides of the straps 32 and 33.

Paragraph beginning at line 15 of page 23 has been amended as follows:

Hinge pieces 38 and 39 opposed to the holes 36 and 37 are also provided with [holes] cavities 40 and 41 (hereinafter referred to as "holes"). Mechanisms of the left and the right hinges are the same and therefore, here, for convenience, an explanation will be given of the hinge on the left side. A latch pin 42 urged to an opening side by a spring is contained in the hole 36 of the hinge piece 34 on

one side. By pivotal movement of the strap 32 and accordingly, by pivotal movement of the hinge piece 34, the hole 36 is also pivoted. Further, when the hole 36 is opposed to the hole 40 of the hinge piece 38 opposed thereto, the latch pin 42 is fitted to the opposed hole 40. Thereby, the hinge piece 34 and the strap 32 integral therewith are fixed.

Paragraph beginning at line 23 of page 24 has been amended as follows:

Further, a push mechanism comprises a pin member or push-out bar 48 [is] integrated with a button member or push button 49 to serve to push out the latch pin 42 fitted to the hole 41 or 41 by moving in an up and down direction. When the latch pin 42 is pushed out from the hole 40 or 422, the strap 32 or 33 is made pivotable and is brought into the opened state relative to the main body of the cabinet by being urged by the spring. Further, a number of the strap coupled by the hinge may be one or may be two. Further, it is preferable to provide a plate P having a large sectional area at the front end of the push-out bar 48. Further, when the push button 49 is urged to return to the original position toward the outer side of the main body by a spring, the push button 49 is easy to push.

Paragraph beginning at line 5 of page 36 has been amended as follows:

As has been explained above, according to the wrist mounting-type electronic apparatus of the invention, engagement of the engaging means is disengaged by the push button and the strap is brought into the opened state and therefore, the wrist mounting-type electronic apparatus can promptly be disengaged from the wrist. There is a case in which the wrist mounting-type electronic apparatus is intended to promptly detach and attach from and to the wrist depending on its function such as a communication function and in such a case, the invention is extremely convenient. Further, according to the invention, the strap is formed [by the] of a hard material and therefore, the wrist mounting-type electronic apparatus is mounted to the wrist extremely easily.

Paragraph beginning at line 18 of page 36 has been amended as follows:

Further, according to the wrist mounting-type electronic apparatus of the invention, engagement between the inserting portion and the inserted portion is disengaged by the push button, the strap is brought into the opened state and therefore, the wrist mounting-type electronic apparatus can promptly be disengaged from the wrist. There is a case in

which the wrist mounting-type electronic apparatus is intended to swiftly detach and attach from and to the wrist depending on its function such as a communication function and accordingly, in such a case, the invention is extremely convenient. Further, according to the invention, the strap is formed [by the] of a hard material and accordingly, the wrist mounting-type electronic apparatus is mounted to the wrist extremely easily. Further, according to the invention, the strap is engaged by a combination of the inserting portion and the inserted portion and therefore, there is achieved an effect of capable of optically recognizing engagement easily and facilitating handling thereof.